#815, rev.5, suppl.

AQUACULTURE PRODUCTION - Graphical Summary, 1980-1991

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Prepared by

Fishery Information, Data and Statistics Service
FAO, Fisheries Department

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ROME, July 1993

PREPARATION OF THIS DOCUMENT

This document provides a graphical summary of the aquaculture production data which are presented in tabular form in *FAO Fisheries Circular* No. 815 Rev.5 (1993). Corresponding tabular summaries are also provided. The provision of a graphical summary to supplement data tabulations is a component of a policy of the Fishery Information, Data and Statistics Service to assist users in the interpretation of statistics.

FAO Fishery Information, Data and Statistics Service.
Aquaculture production - graphical summary, 1980-1991.
FAO Fisheries Circular. No. 815, Rev.5, Suppl. Rome, FAO. 1993. 21p.

ABSTRACT

Quantity and value statistics on aquaculture production of fish, crustaceans, molluscs and aquatic plants are summarised in graphical and tabular form by aquatic environment (brackish, marine and inland waters) and main groups of species for the period 1984-1991. For salmon and shrimp, data are summarised for the extended time period 1980-1991. Comparisons between the quantities provided from aquaculture production and from catches of wild stocks are also shown.

CONTENTS

Table / Graph			Page
World Aquaculture Production, 1984-91			1
World Aquaculture Production by Categories of Species, 1984-91			4
Aquaculture Production	of Fish, 1984-91		7
"	"	of Catfishes, 1984-91	9
"	"	of Tilapias, 1984-91	10
"	"	of Atlantic and Pacific Salmons, 1980-91	11
"	"	of Shrimps, 1980-91	14
"	"	of Clams, Cockles and Scallops, 1984-91	16
"	"	of Mussels and Oysters, 1984-91	17
"	"	of Molluscs, 1984-91	18
"	"	of Brown Seaweeds, 1984-91	20
"	"	of Red Seaweeds, 1984-91	21

World Aquaculture Production, 1984-1991

Aquaculture Production by Environment (metric tons)

	1984	1985	1986	1987	1988	1989	1990	1991
Brackish Aquaculture	599,546	659,743	771,489	1,000,293	1,107,213	1,137,201	1,298,845	1,318,508
Marine Aquaculture	2,174,020	2,412,367	2,661,119	2,974,962	3,320,362	3,366,526	3,465,184	3,671,016
Inland Aquaculture	3,886,909	4,653,918	5,370,149	6,169,439	6,771,803	6,929,730	7,337,751	7,685,563
World Aquaculture	6,660,475	7,726,028	8,802,757	10,144,694	11,199,378	11,433,457	12,101,780	12,675,087

Total Production by Aquaculture and Wild Catch (metric tons)

	1984	1985	1986	1987	1988	1989	1990	1991
World Aquaculture	6,660,475	7,726,028	8,802,757	10,144,694	11,199,378	11,433,457	12,101,780	12,675,087
Wild World Catch	77,250,025	78,597,572	84,000,743	84,233,906	87,816,722	88,774,843	85,331,720	84,250,813
Total World Production	83,910,500	86,323,600	92,803,500	94,378,600	99,016,100	100,208,300	97,433,500	96,925,900

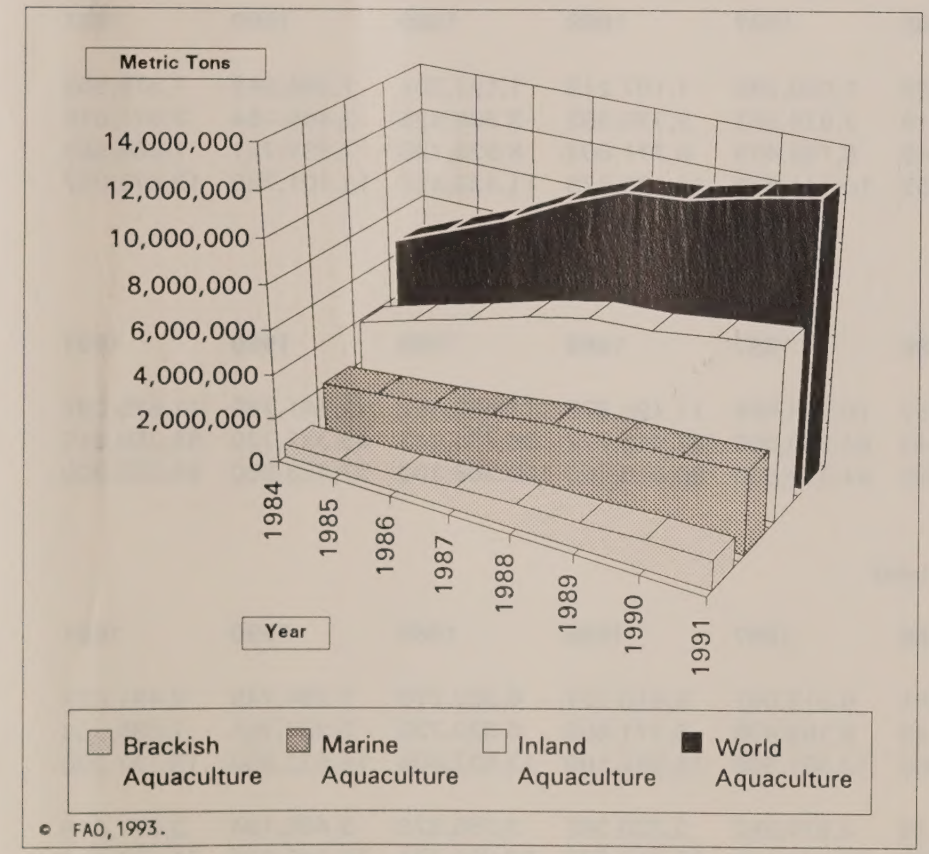
Total Inland and Marine Production by Aquaculture and Wild Catch (metric tons)

	1984	1985	1986	1987	1988	1989	1990	1991
Wild Inland Catch	6,120,391	5,991,982	6,357,451	6,512,061	6,610,297	6,902,770	7,284,749	7,491,637
Inland Aquaculture	3,886,909	4,653,918	5,370,149	6,169,439	6,771,803	6,929,730	7,337,751	7,685,563
Total Inland Production	10,007,300	10,645,900	11,727,600	12,681,500	13,382,100	13,832,500	14,622,500	15,177,200
Marine Aquaculture	2,174,020	2,412,367	2,661,119	2,974,962	3,320,362	3,366,526	3,465,184	3,671,016
Wild Marine Catch	71,729,180	73,265,333	78,414,781	78,722,138	82,313,638	83,009,274	79,345,816	78,077,684
Total Marine Production	73,903,200	75,677,700	81,075,900	81,697,100	85,634,000	86,375,800	82,811,000	81,748,700

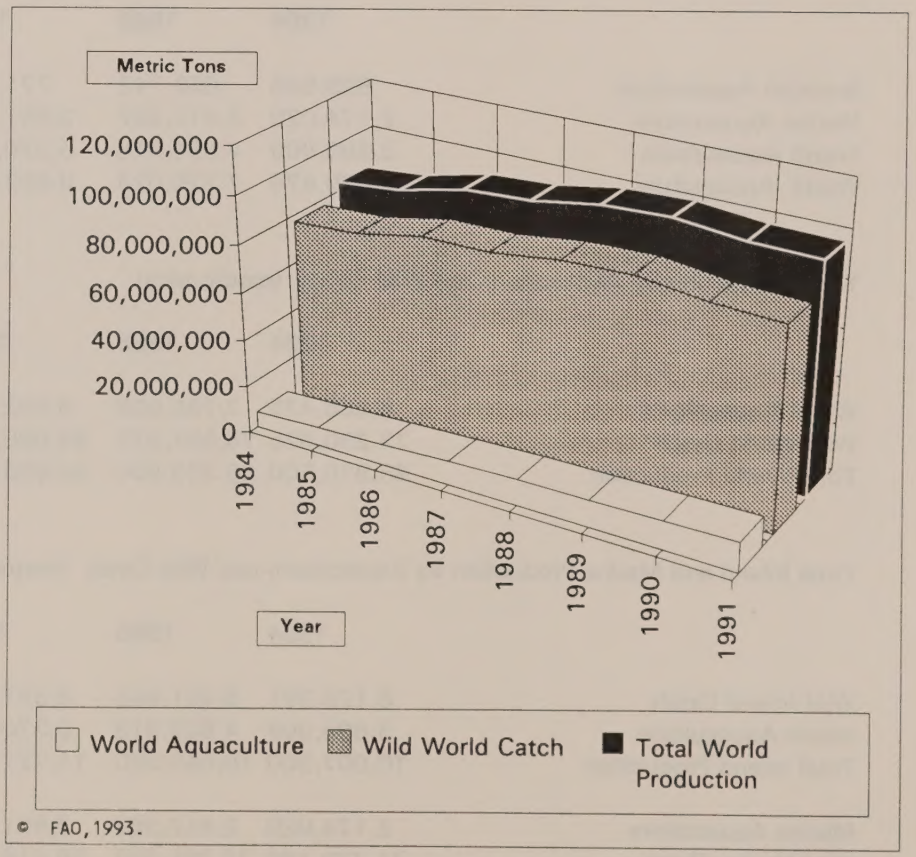
World Aquaculture Production

by Environment and Comparison with Total Production, 1984-1991

Aquaculture Production by Environment



Aquaculture and Total Production

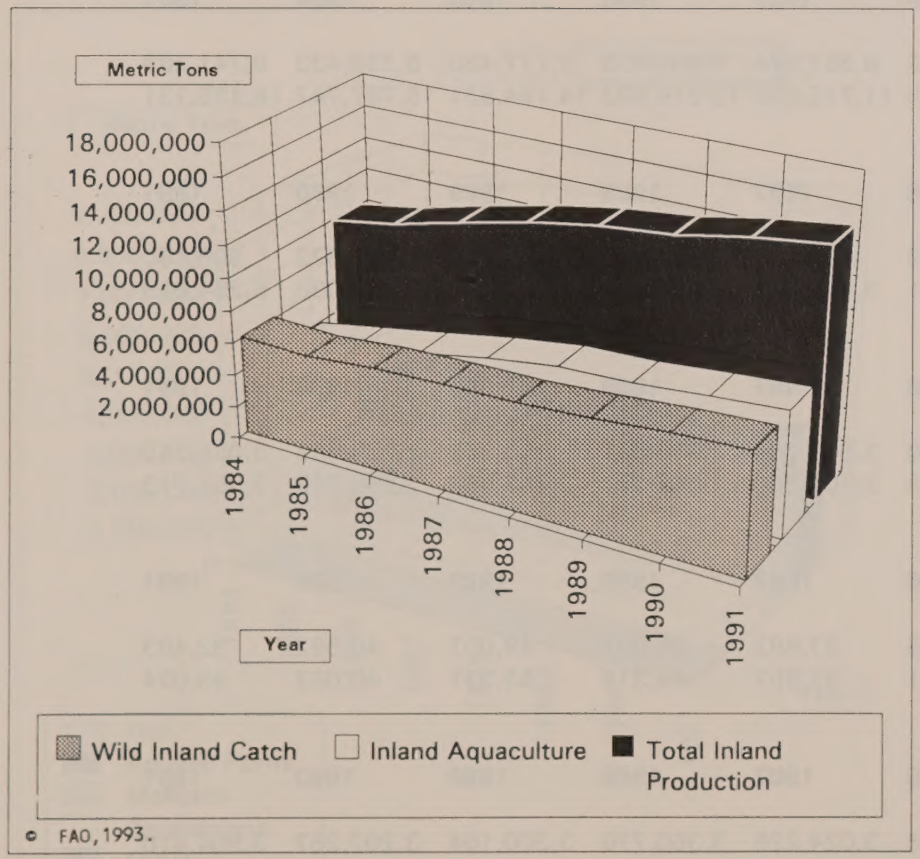


Data exclude Aquatic Plants

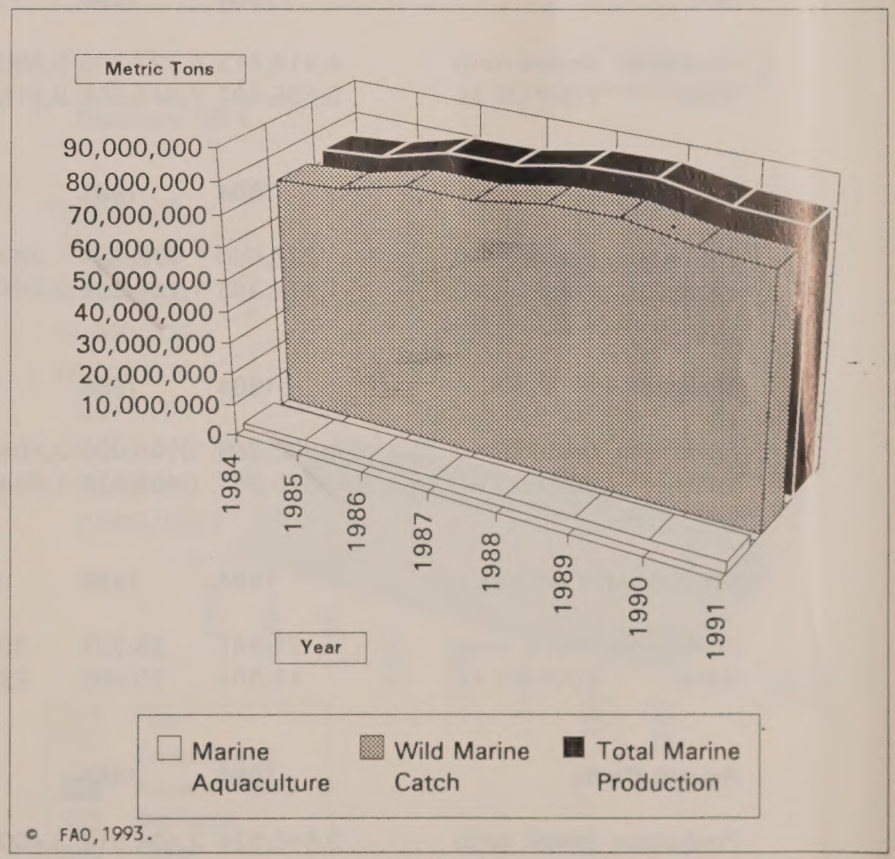
World Aquaculture Production

by Inland and Marine Waters, 1984-1991

Inland Waters



Marine Waters



Data exlude Aquatic Plants

World Aquaculture Production by Categories of Species, 1984-1991

by Quantity and Value

Fish		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	4,418,613	5,227,746	5,980,615	6,857,574	7,563,438	7,777,450	8,338,433	8,741,283
Value	('000 US $)	6,635,392	7,643,358	9,616,425	11,715,039	13,214,993	14,194,931	15,797,747	16,135,131

Crustaceans		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	226,650	273,326	387,643	587,943	652,333	686,909	753,322	806,260
Value	('000 US $)	1,171,283	1,450,395	2,066,481	3,668,852	4,495,026	4,497,378	4,899,036	5,254,649

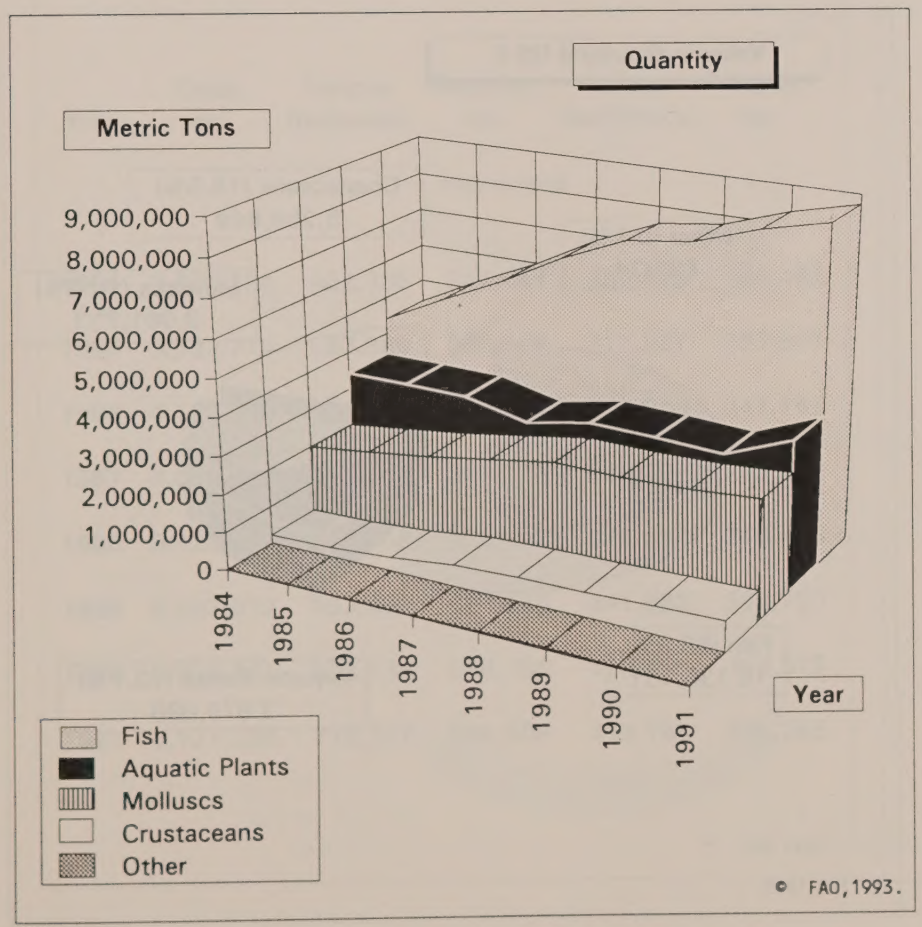
Molluscs		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	1,993,859	2,196,936	2,404,310	2,671,703	2,949,831	2,920,369	2,969,619	3,095,345
Value	('000 US $)	1,315,961	1,489,228	1,854,688	2,206,305	2,646,553	2,769,958	2,895,715	3,061,713

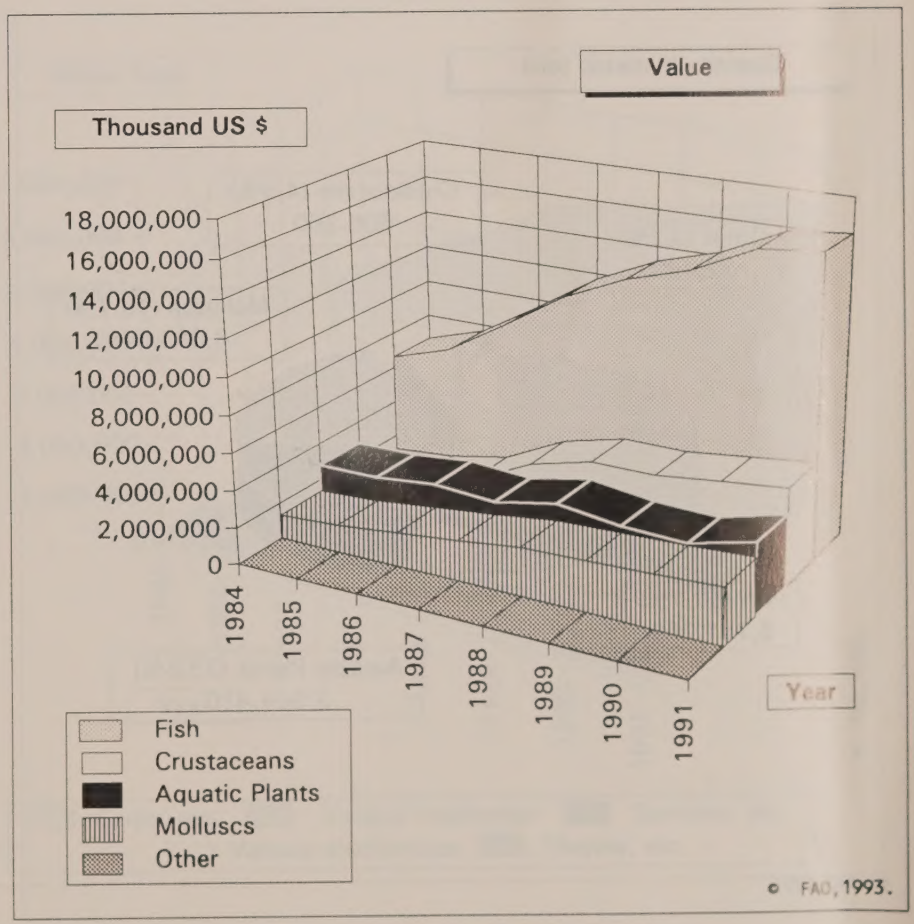
Other Aquatic Animals		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	21,541	28,233	30,396	27,692	34,031	49,007	40,692	32,493
Value	('000 US $)	19,961	20,666	22,991	32,957	44,316	55,391	40,052	43,024

Aquatic Plants		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	3,446,524	3,434,913	3,400,846	3,024,228	3,350,770	3,300,104	3,207,267	3,904,410
Value	('000 US $)	2,792,375	2,805,181	3,121,182	2,889,914	3,544,501	3,115,941	2,998,911	3,879,096

World Aquaculture Production by Categories of Species

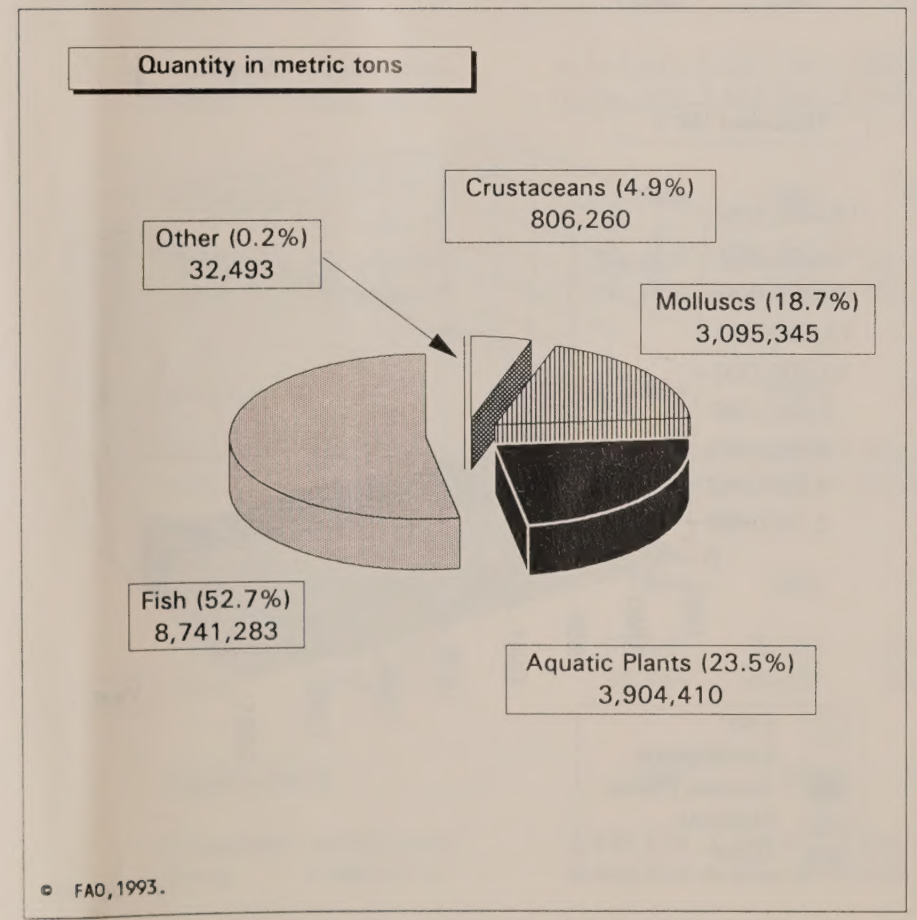
by Quantity and Value, 1984-1991

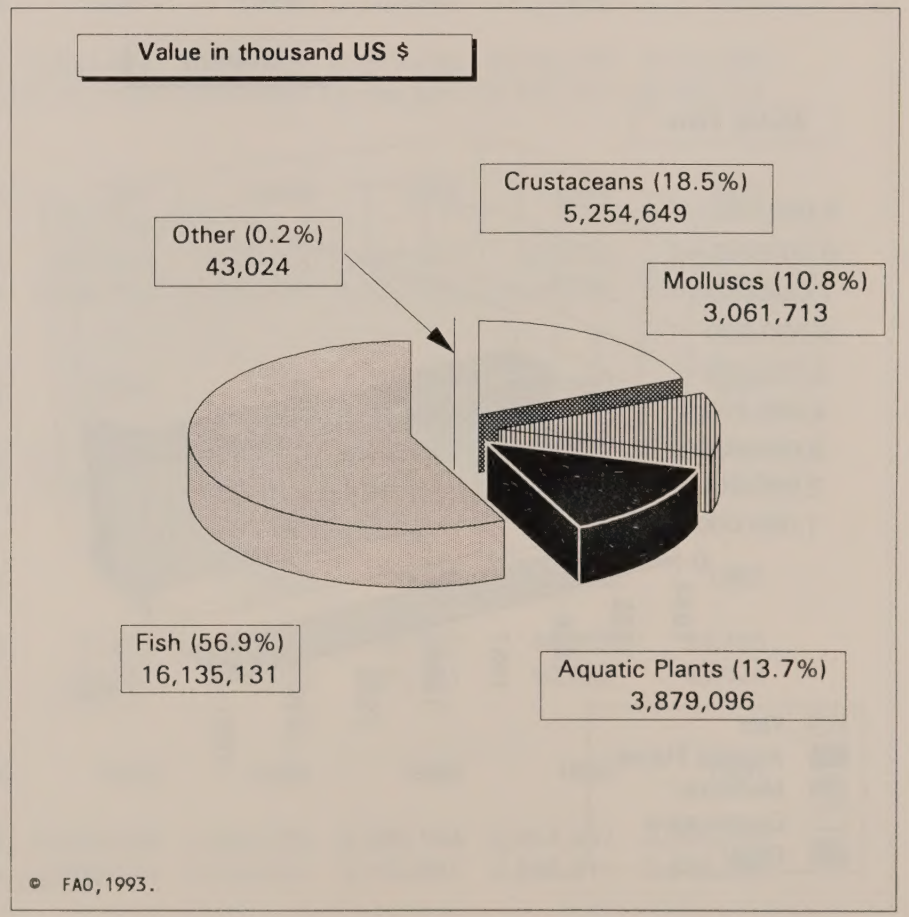




1991 World Aquaculture Production by Categories of Species

by Quantity and Value as Percentage of the Total





Aquaculture Production of Fish

Year	Carps, etc.	Various freshwater	Salmons, etc.	Various diadromous	Tilapias, etc.
	(. . . . . *metric tons* . . . . .)				
1984	2,880,164	462,335	247,044	355,493	186,469
1985	3,523,770	583,980	266,618	313,931	237,501
1986	4,181,328	630,097	303,530	313,616	241,741
1987	4,886,322	654,742	346,226	336,396	283,991
1988	5,428,021	668,602	422,726	349,944	310,435
1989	5,507,512	693,959	497,536	341,983	364,793
1990	5,838,491	695,138	556,166	440,468	393,819
1991	6,127,234	736,321	605,506	419,784	405,255

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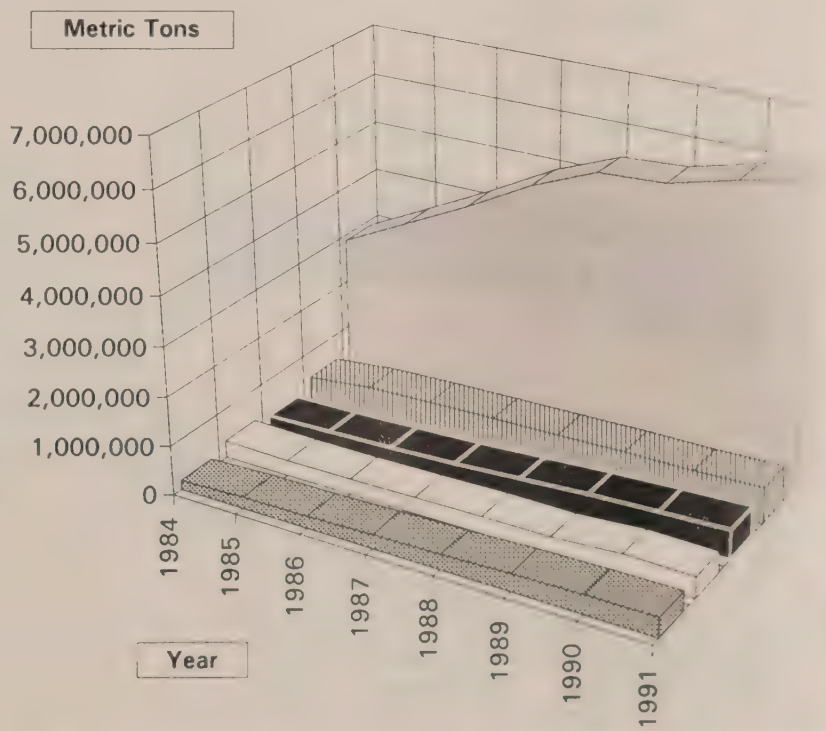
Main Groups of Species Production, 1984-1991



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Aquaculture Production of Fish

1991 Production

(. . . metric tons . . .)

Inland fishes	Marine fishes	Total fishes
8,400,808	340,475	8,741,283

1991 Value

(. . . 1000 US $ . . .)

Inland fishes	Marine fishes	Total fishes
13,791,585	2,343,546	16,135,131

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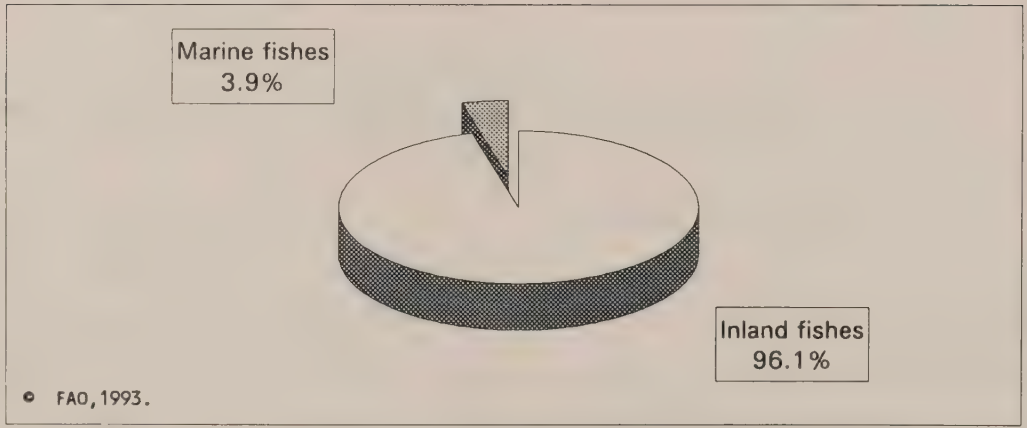
Comparison of Quantity for Marine and Inland Waters, 1991



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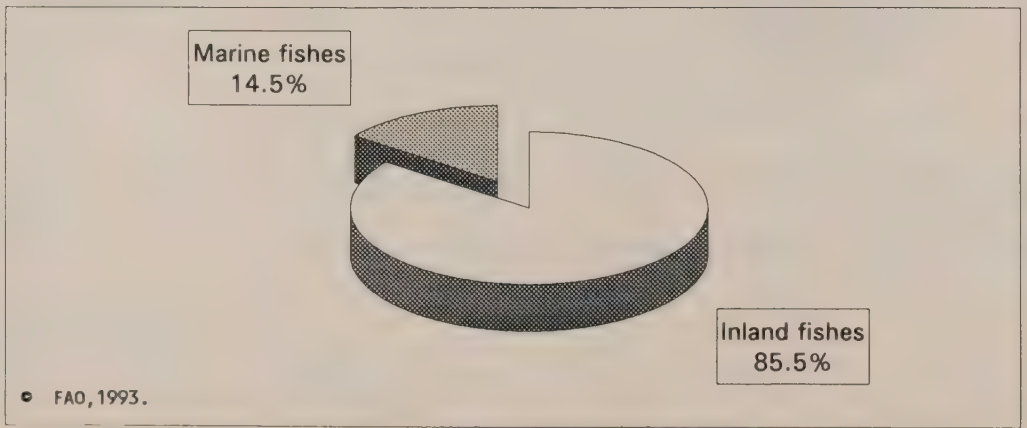
Comparison of Value for Marine and Inland Waters, 1991



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Aquaculture Production of Catfishes

Year	Total Production	Aquaculture Production	Wild Catch
	(. . . . . *metric tons* . . . . .)		
1984	233,078	127,173	105,905
1985	236,437	182,405	54,032
1986	266,897	216,997	49,900
1987	310,076	236,822	73,254
1988	300,466	241,717	58,749
1989	327,401	263,050	64,351
1990	298,282	242,965	55,317
1991	312,654	261,965	50,689

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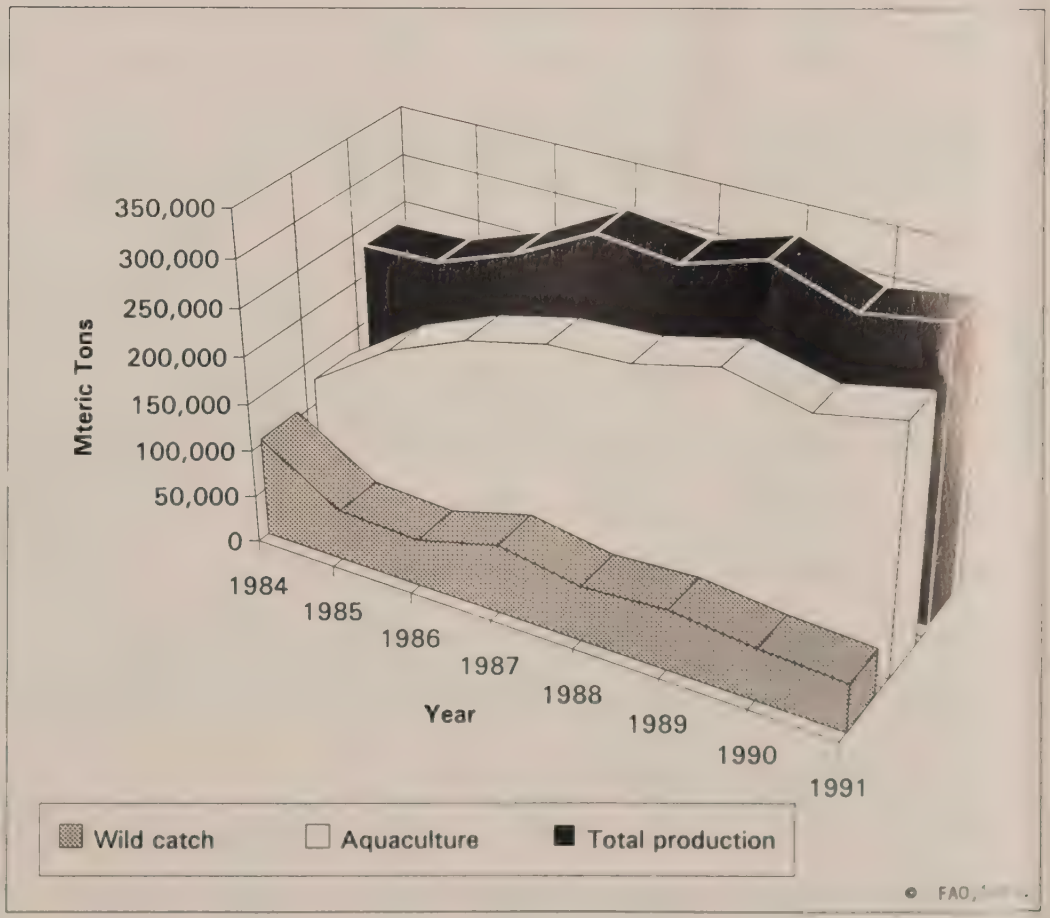
Comparison with Total Production, 1984-1991



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Aquaculture Production of Tilapias

Year	Total Production	Aquaculture Production	Wild Catch
	(. . . . . *metric tons* . . . . .)		
1984	421,004	186,469	234,535
1985	420,013	237,496	182,517
1986	470,664	241,679	228,985
1987	518,871	283,931	234,940
1988	571,664	310,385	261,279
1989	622,155	364,750	257,405
1990	707,840	393,689	314,151
1991	731,734	404,811	326,923

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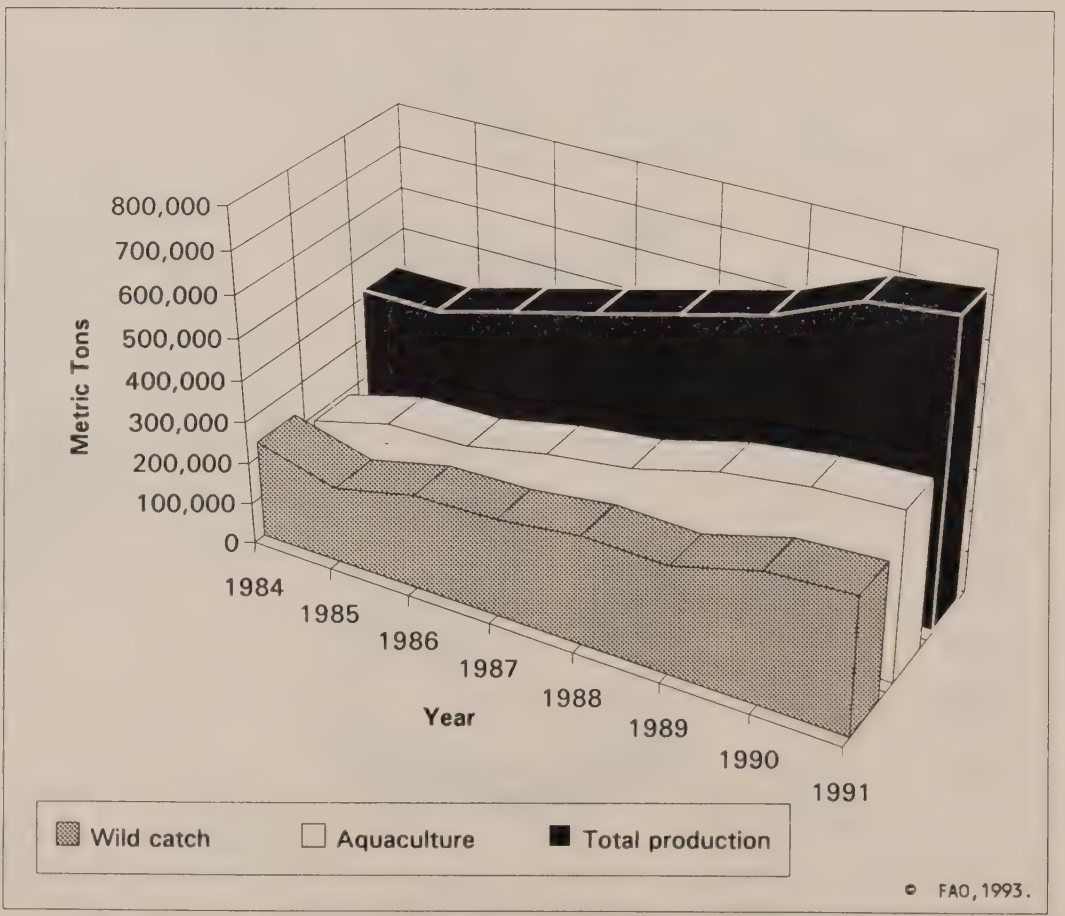
Comparison with Total Production, 1984-1991



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Aquaculture Production of Atlantic and Pacific Salmons

Total Production (metric tons)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	199	1991
Pacific salmon	564,299	640,534	555,050	671,951	617,595	792,168	665,811	641,826	647,591	872,007	838,98	980,967
Atlantic salmon	17,485	21,732	22,867	30,648	37,059	49,943	69,900	78,446	119,902	180,311	198,69	230,982
Total salmons	581,784	662,266	577,917	702,599	654,654	842,111	735,711	720,272	767,493	1,052,318	1,037,67	211,949

Aquaculture Production (metric tons)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	199	1991
Pacific salmons	5,587	8,947	14,131	12,399	6,547	9,595	11,128	18,752	30,664	41,641	55,4	62,676
Atlantic salmon	4,762	10,099	12,607	20,486	27,404	38,797	59,823	68,125	112,363	166,488	189,6	223,226
Total salmons	10,349	19,046	26,738	32,885	33,951	48,392	70,951	86,877	143,027	208,129	245,0	285,902

Total Wild Catch (metric tons)

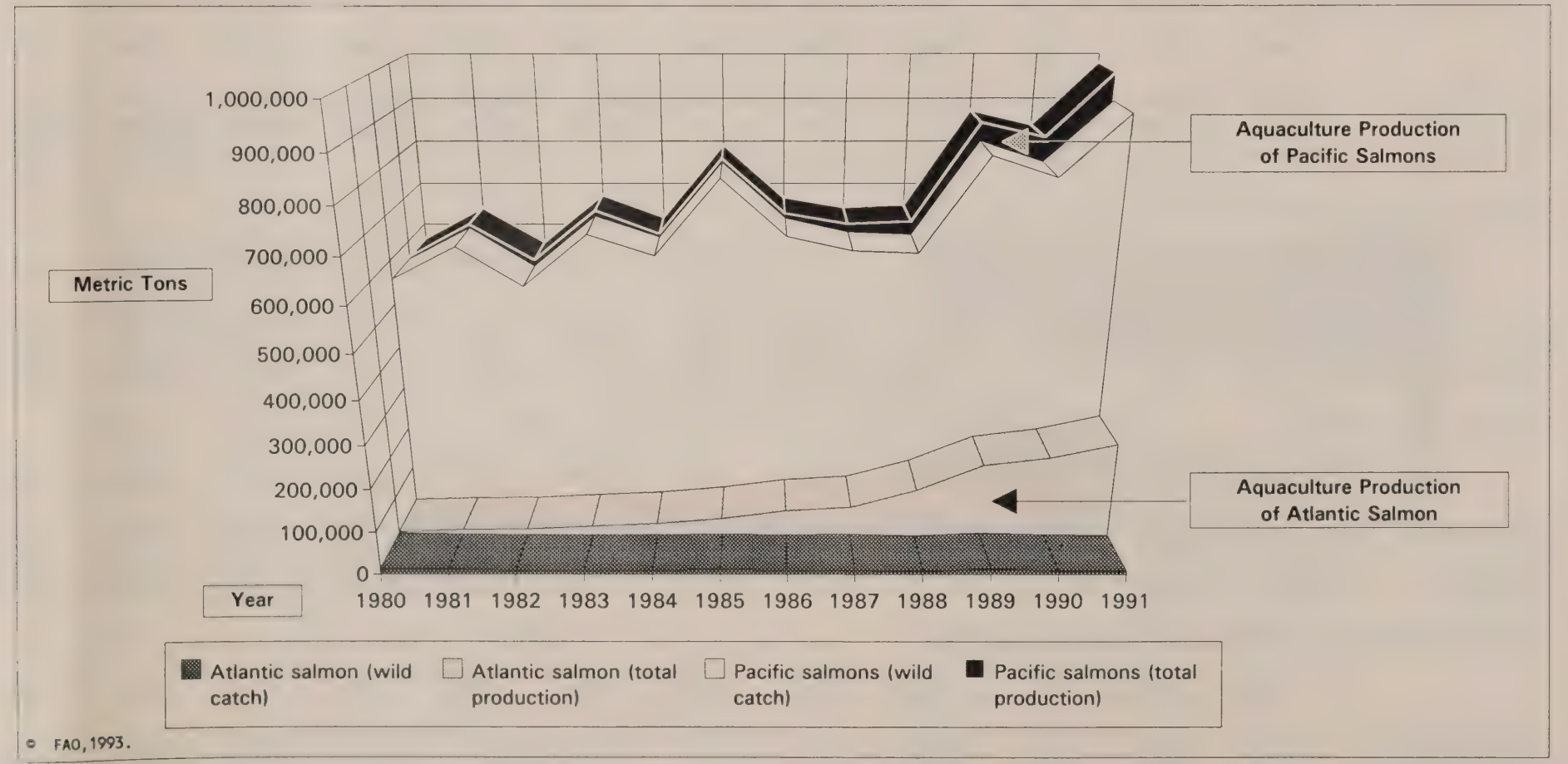
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	199	1991
Pacific salmons	558,712	631,587	540,919	659,552	611,048	782,573	654,683	623,074	616,927	830,366	783,5	918,291
Atlantic salmon	12,723	11,633	10,260	10,162	9,655	11,146	10,077	10,321	7,539	13,823	9,03	7,756
Total salmons	571,435	643,220	551,179	669,714	620,703	793,719	664,760	633,395	624,466	844,189	792,5	926,047

Aquaculture Production of Atlantic Salmon by Quantity and Value

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Quantity (m. tons)	4,762	10,099	12,607	20,486	27,404	38,797	59,823	68,125	112,363	166,488	189,653	223,226
Value ('000 US$)	23,827	50,520	63,150	102,821	155,417	222,401	312,048	429,040	694,210	817,977	1,002,143	969,566

Aquaculture Production of Atlantic and Pacific Salmons

Presented as Difference between Total Production and Wild Catches by Species, 1980-1991



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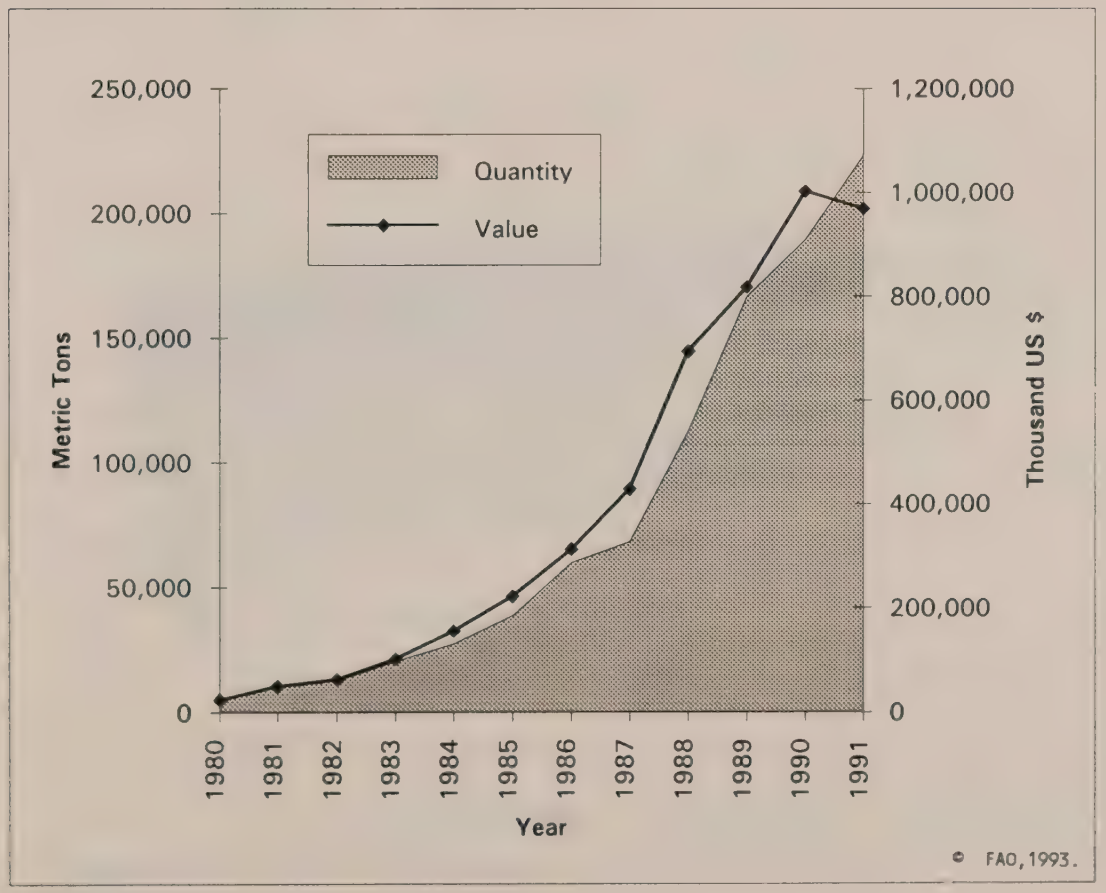
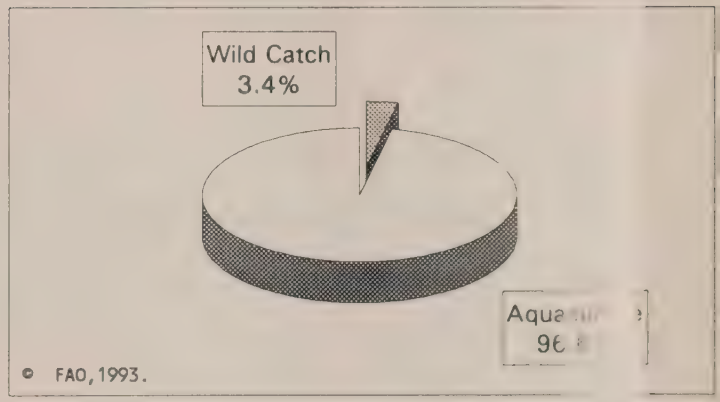
Aquaculture Production of Atlantic Salmon

and Comparison with Wild Catch of Atlantic and Pacific Salmons for 1991

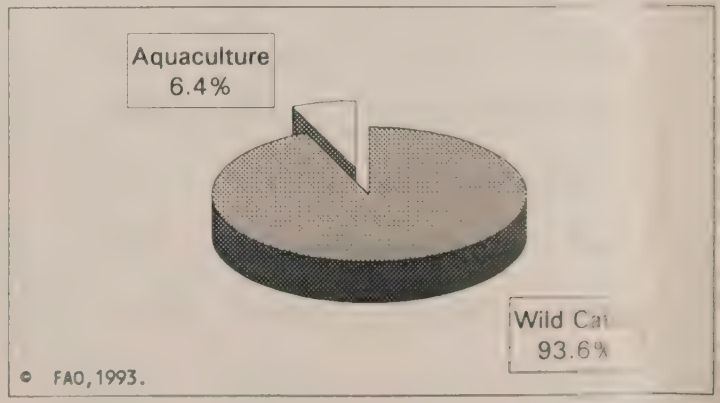
Atlantic Salmon: Aquaculture by Quantity and Value, 1980-1991



Atlantic Salmon Production, 1991



Pacific Salmons Production, 1991



Aquaculture Production of Shrimps

Year	Total Production	Aquaculture Production	Wild Catch
	(.	*metric tons*	. . . . .)
1980	1,683,230	49,182	1,634,048
1981	1,629,532	59,176	1,570,356
1982	1,739,667	66,320	1,673,347
1983	1,826,696	113,786	1,712,910
1984	1,916,147	172,149	1,743,998
1985	2,133,243	218,027	1,915,216
1986	2,233,477	312,820	1,920,657
1987	2,364,752	500,188	1,864,564
1988	2,497,153	575,722	1,921,431
1989	2,507,926	607,717	1,900,209
1990	2,574,547	666,025	1,908,522
1991	2,647,811	718,897	1,928,914

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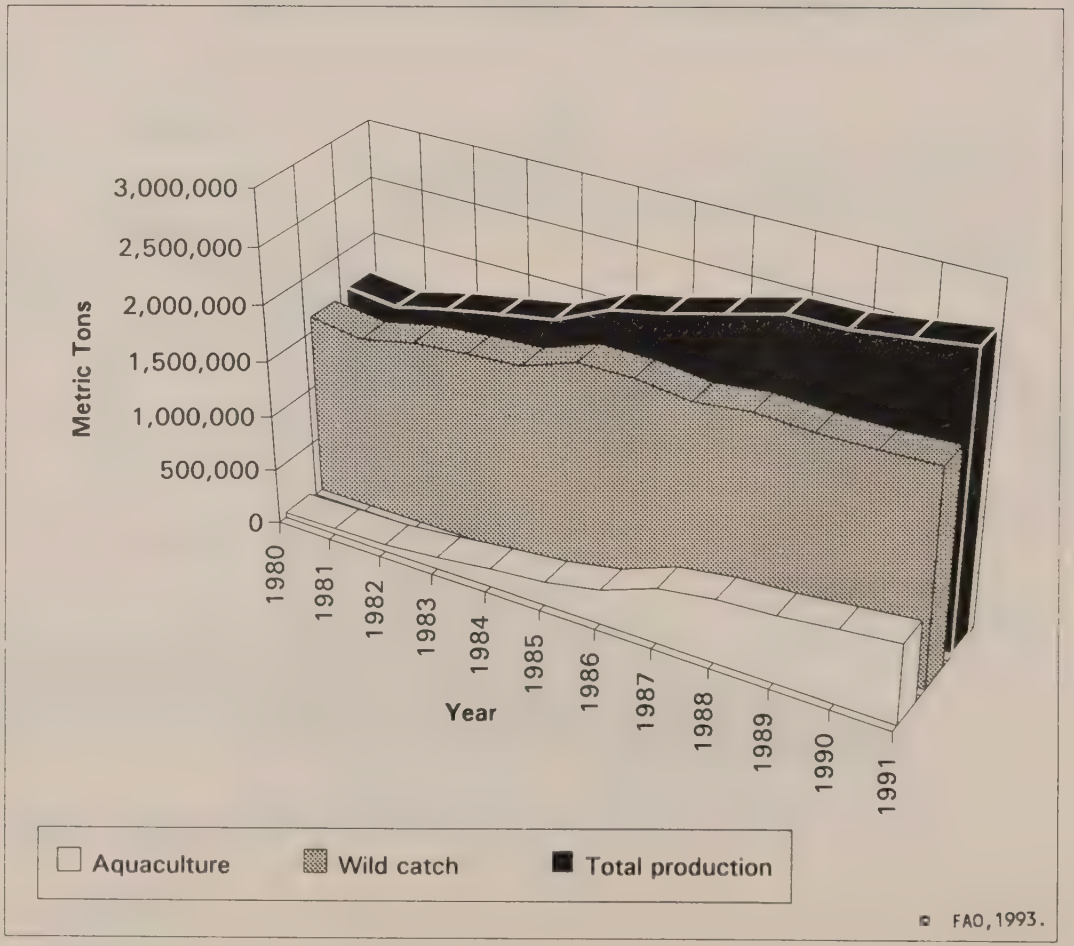
Comparison with Total Production, 1980-1991



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Aquaculture Production of Shrimps

Year	Aquaculture Production	Total Value
	(metric tons)	*(1000 US$)*
1980	49,182	353,000
1981	59,176	416,900
1982	66,320	451,600
1983	113,786	689,600
1984	172,149	924,102
1985	218,027	1,190,108
1986	312,820	1,767,382
1987	500,188	3,286,567
1988	575,722	4,088,275
1989	607,717	4,096,619
1990	666,025	4,433,659
1991	718,897	4,753,895

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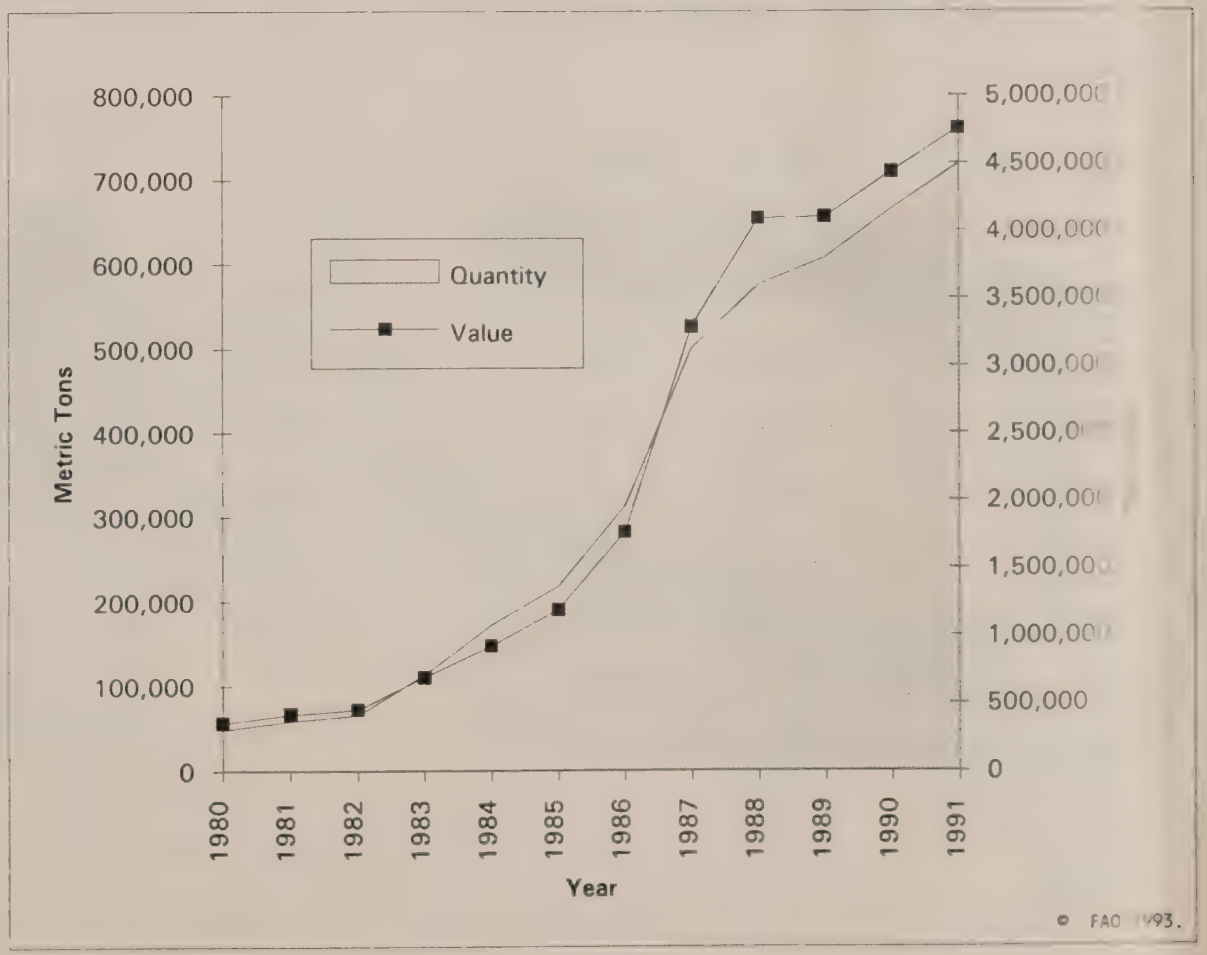
Quantity and Value, 1980-1991



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Aquaculture Production of Clams, Cockles and Scallops

Comparison with Total Production, 1984-1991

Year	Total Production	Aquaculture Production	Wild Catch
	(.	*metric tons*	. . . . .)
1984	2,088,602	390,473	1,698,129
1985	1,950,771	469,733	1,481,038
1986	1,956,830	601,749	1,355,081
1987	2,228,077	639,096	1,588,981
1988	2,332,680	760,911	1,571,769
1989	2,296,825	784,147	1,512,678
1990	2,340,675	839,677	1,500,998
1991	2,355,921	927,976	1,427,945

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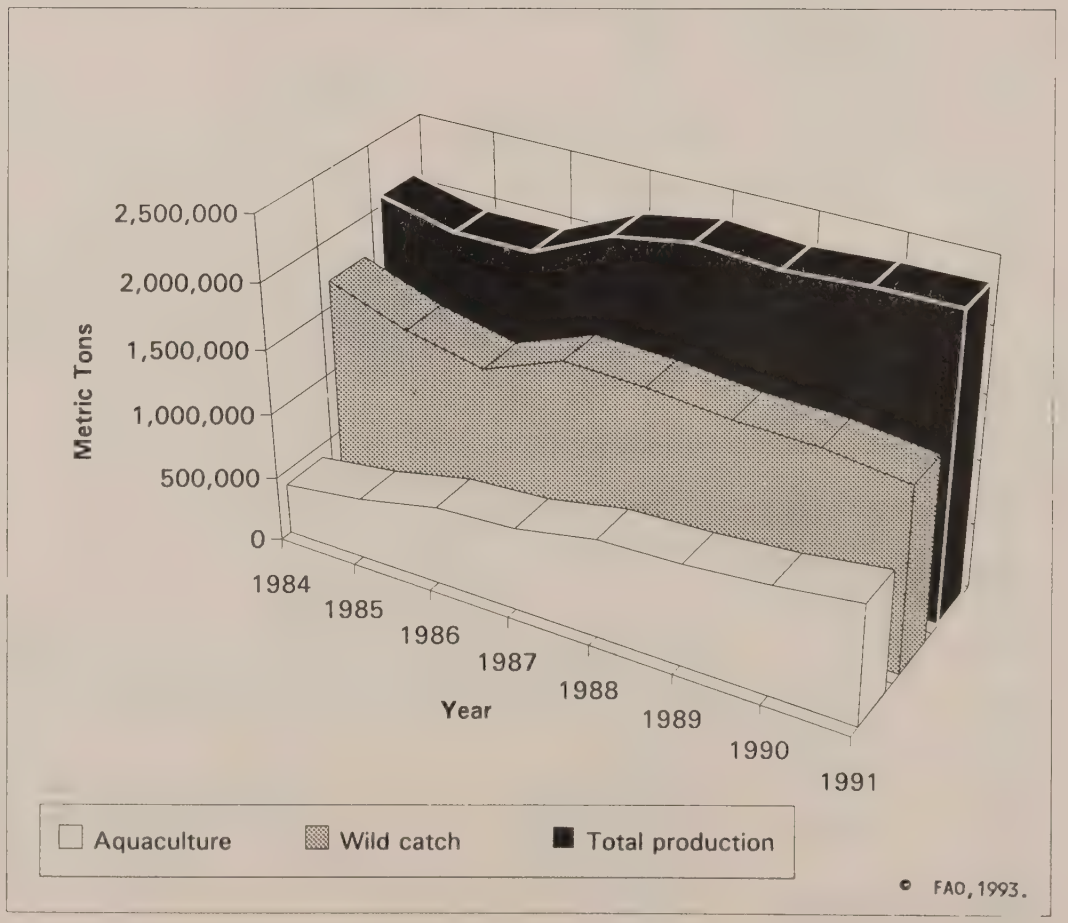

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Aquaculture Production of Mussels and Oysters

Year	Total Production	Aquaculture Production	Wild Catch
	(.	*metric tons*	. . . . .)
1984	1,955,604	1,563,738	391,866
1985	2,054,011	1,679,279	374,732
1986	2,097,440	1,735,793	361,647
1987	2,252,832	1,917,398	335,434
1988	2,390,176	2,055,390	334,786
1989	2,358,649	2,025,826	332,823
1990	2,329,891	1,963,724	366,167
1991	2,343,487	1,989,078	354,409

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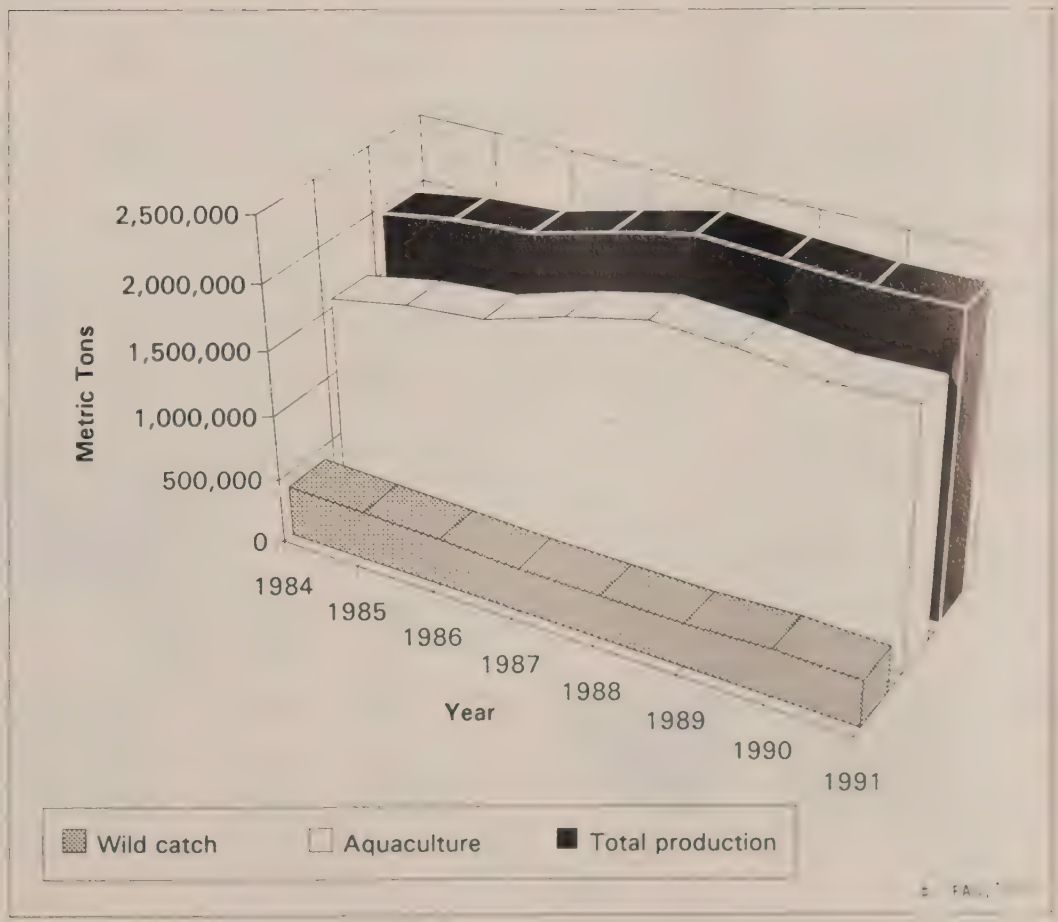
Comparison with Total Production, 1984-1991



Aquaculture Production of Molluscs by Groups of Species, 1984-1991

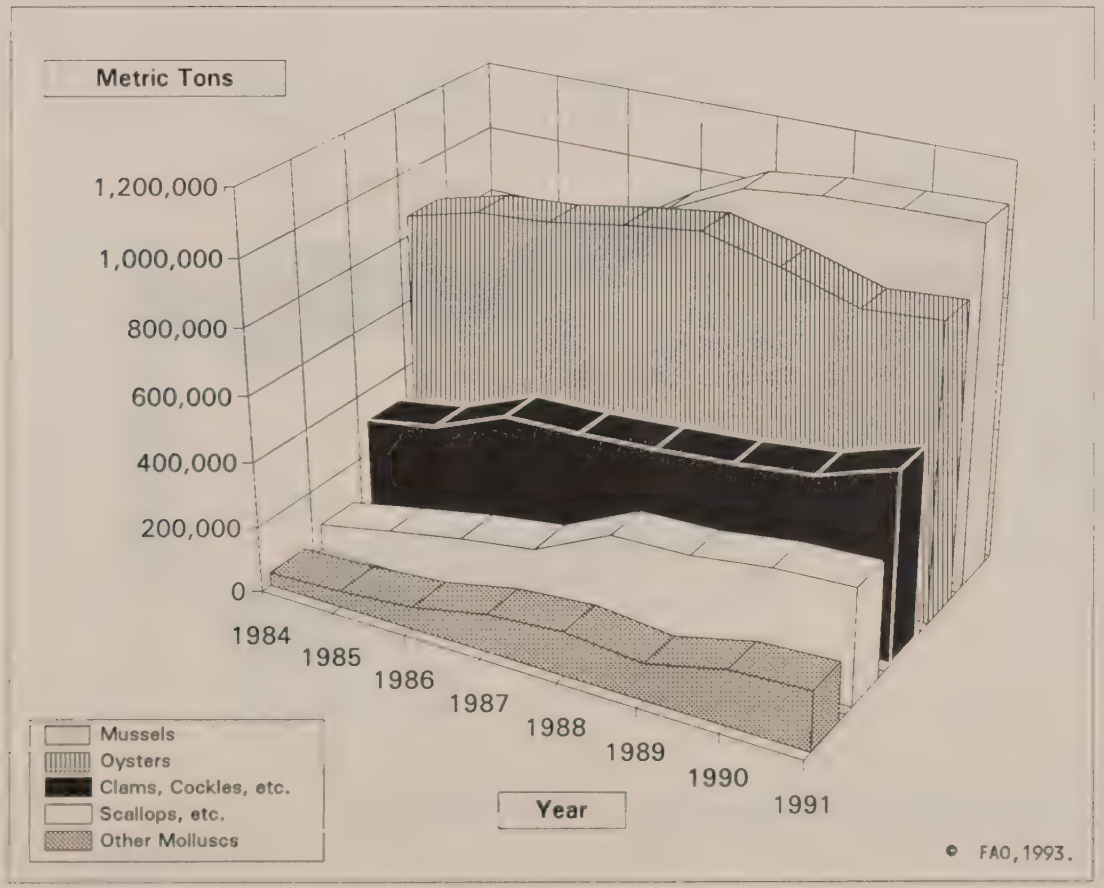
by Quantity and Value

Oysters		1984	1985	1986	1987	1988	1989	1990	1991
Production	(metric tons)	863,591	920,642	937,681	975,879	1,005,598	951,315	881,955	900,386
Value	('000 US$)	544,851	590,921	749,896	872,074	941,988	940,758	969,591	1,049,787
Mussels		**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**
Production	(metric tons)	700,147	758,637	798,112	941,519	1,049,792	1,074,511	1,081,769	1,088,692
Value	('000 US$)	348,345	368,905	395,238	412,323	440,677	521,036	480,644	502,707
Scallops, pectens		**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**
Production	(metric tons)	78,588	122,471	164,274	196,779	305,489	310,912	340,738	350,575
Value	('000 US$)	100,232	167,933	242,918	332,124	531,844	537,946	547,100	569,824
Clams, cockles, arkshells		**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**
Production	(metric tons)	311,885	347,262	437,475	442,317	455,422	473,235	498,939	577,401
Value	('000 US$)	301,119	333,298	423,063	506,801	625,231	695,268	792,662	819,445
Other molluscs		**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**
Production	(metric tons)	39,648	47,924	66,768	115,209	133,530	110,396	166,218	178,291
Value	('000 US$)	21,414	28,171	43,573	82,983	106,813	74,950	105,718	119,950

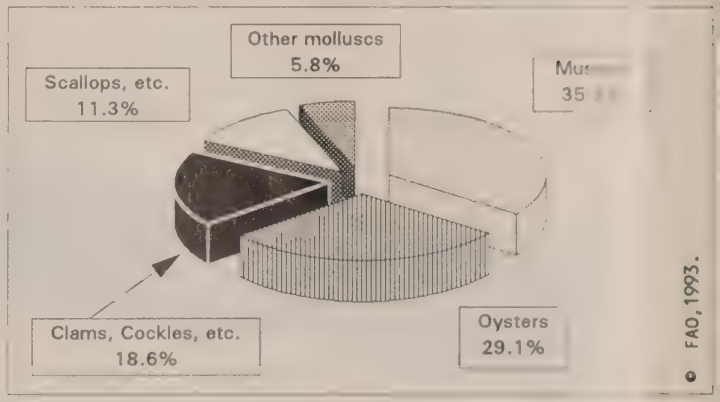
Aquaculture Production of Molluscs

by Groups of Species, 1984-1991 and Comparison for Quantity and Value in 1991

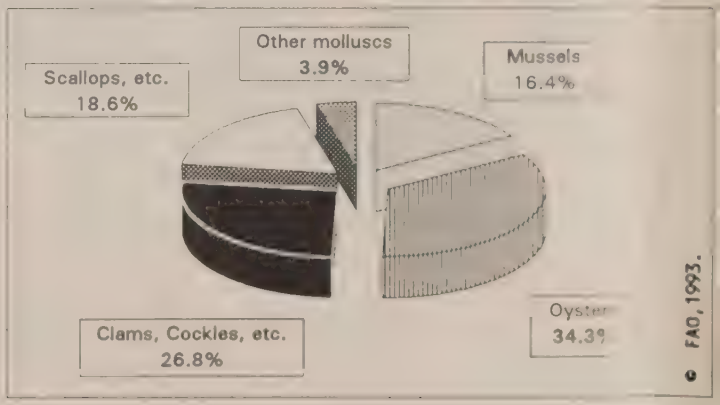
Molluscs: Groups of Species Production, 1984-1991



Quantity, 1991



Value, 1991



Aquaculture Production of Brown Seaweeds

Year	Total Production	Aquaculture Production	Wild Catch
	(. . . . . *metric tons* . . . . .)		
1984	2,522,923	2,522,923	0
1985	2,575,612	2,510,740	64,872
1986	2,392,107	2,269,880	122,227
1987	2,200,290	2,002,424	197,866
1988	2,518,540	2,076,994	441,546
1989	2,878,329	2,214,355	663,974
1990	2,687,303	2,033,215	654,088
1991	3,239,242	2,675,298	563,944

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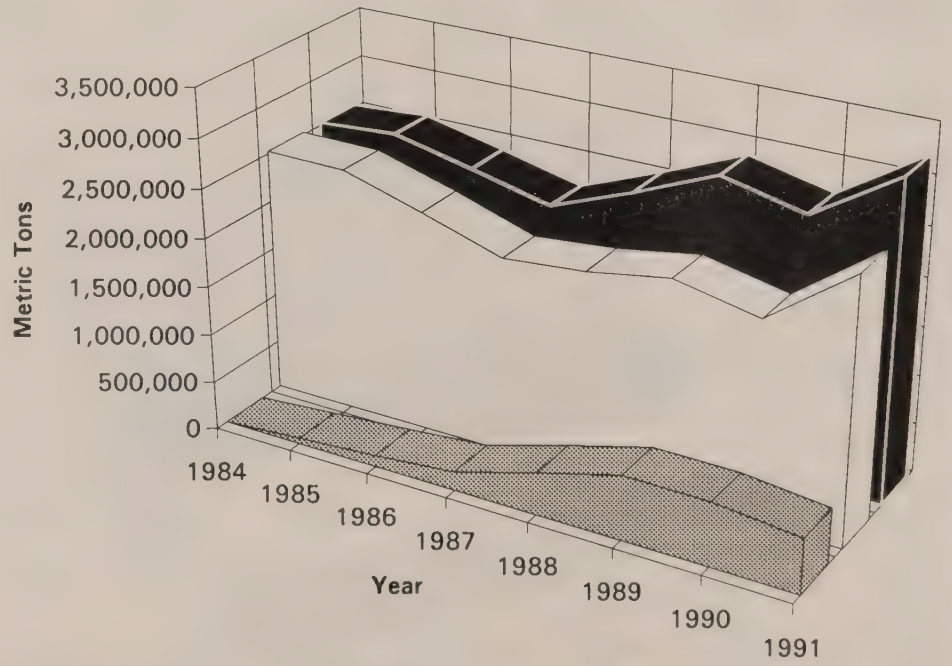
Comparison with Total Production, 1984-1991



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Aquaculture Production of Red Seaweeds

Comparison with Total Production, 1984-1991

Year	Total Production	Aquaculture Production	Wild Catch
	(.	*metric tons*	. . . . .)
1984	1,124,213	696,058	428,155
1985	1,090,416	664,434	425,982
1986	1,134,385	736,480	397,905
1987	1,039,736	645,364	394,372
1988	1,262,660	849,903	412,757
1989	1,211,021	862,630	348,391
1990	1,226,339	884,127	342,212
1991	1,268,461	903,561	364,900

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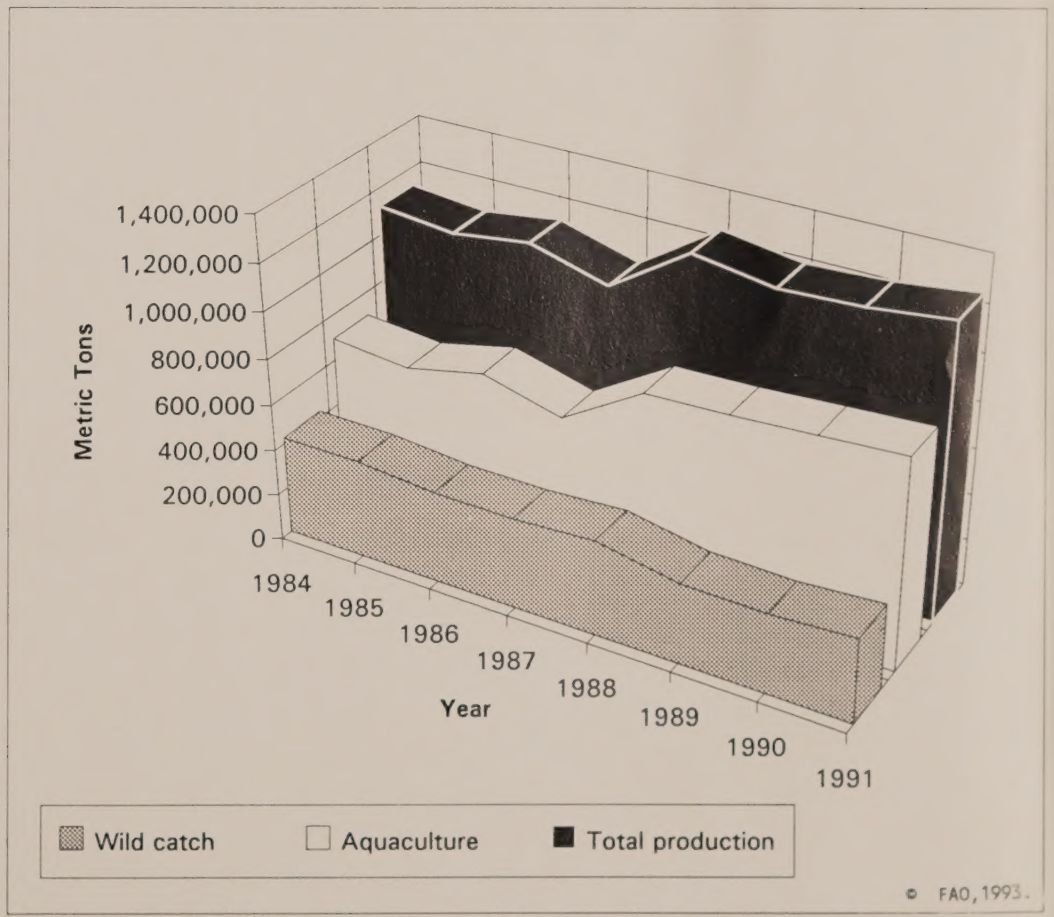

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